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ABSTRACT

Infusion of information technology is viewed as a cost-effective solution addressing the problem of creating access to higher education and quality of instructional delivery. Planning and implementation of information technology is a competitive necessity for higher education in general. In this article, an overview of an approach to strengthen the technological capability of academic programs at the University of Colorado-Denver (CU-Denver) is discussed. Discussion covers issues of creating access and issues of quality of instructional delivery. The paper describes CU Online (the outsourced model), the Executive Programs (in-house model), and the CU Virtual and Master of Public Administration Programs (hybrid model), including the target audience, delivery system characteristics, program outcome, and advantages of each model. Issues for future consideration are also outlined. (AEF)

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Educational Technology: Creating Access and Quality

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Innovation and today's changing climate are driving the transformation of higher education. All institutions of higher education are challenged to respond to increasing competition, shifting learning needs and educational demands of the general population. Infusion of information technology is viewed as a cost-effective solution addressing the problem of creating access to higher education and quality of instructional delivery. Planning and implementaion of information technology is a competitive necessity for higher education in general. In this article, an overview of a unique approach strengthening the technological capability of academic programs at a large urban university will be discussed.

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Innovation and today's changing climate are driving the transformation of higher education. All learning institutions are challenged to respond to the increasing advances in technology, and changing demographics are forcing institutions to rethink the way they do business.

With the demand for higher learning rapidly escalating, Dolence and Norris, authors of *Transforming Higher Education: A Vision for Learning in the 21st Century* (1995), predict that universities will be asked to accommodate an additional 20 million FTE[1] learners by the year 2000. They propose that each member of our workforce will need approximately 30 credit hours of instruction every seven years in order to remain competitive. If this prediction holds true, the influx of these students would require the construction of 672 campuses, under our existing

[1] Full-time equivalency.

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educational structure, each with an enrollment of 30,000 students. However, the resources to meet this demand for higher learning, for the most part, remain fixed. With the infusion of information technology as a cost-effective solution, the University of Colorado at Denver (CU-Denver) has brought forth a unique approach aimed at increasing access to higher education and improving the quality of instructional delivery.

In the Spring of 1997, CU-Denver was granted $9.2 million by the Colorado Commission on Higher Education (CCHE). A first of its kind, the grant was allocated from State Capital Construction Funds, construction money, to retrofit the existing campus buildings in order to accommodate the advances in technology. CU-Denver, as the only public institution for undergraduate and graduate education in the Denver Metro area, faced a great urgency to address the issues of access and quality of higher education. With the ultimate goal of serving its multiple constituents in the most efficient and effective manner in this changing environment, CU-Denver's Information Technology Initiative (ITI) became the necessary response to these challenges facing the State of Colorado.

Issues of Creating Access

Competitive forces within the educational marketplace are driving more people to demand access to educational programs, academic services, and faculty resources on a 24 hour-a-day, 7 day-a-week basis. CU-Denver's ITI has addressed this issue in two ways. First, on-campus students will have access to state of the art technology facilities--smart classrooms, computer classrooms, and multimedia labs, as well as general purpose computing labs. Activities range from retrieval and synthesis of information, to collaboration on problem-solving activities, and to communication and presentation of individual and collaborative work.

Second, remote access and multiple delivery modes for its student laboratories and networks located on- and off-campus, allow for CU-Denver to expand the use of information technology. Enhancement of the campus network and increasing access through technology promotes linkage to the environment -- to communities, to school systems, and to the historically under-served who most often cannot avail themselves of education on traditional residential campuses. With the use of technology, students will be able to access instructional resources, on demand, from home or at work. Thus, technology adoption allows for learning that can take place at any time from anywhere.

While the mission of CU-Denver is primarily urban, it is no longer restricted to that of a limited geographical area. The issues of access and integration to its educational programs and resources are met by a technological infrastructure. This provides alternative access to information and learning technologies, into services and activities, in a way that further enhances the learning and scholarly inquiry of students, faculty, and staff.

Issues of Quality of Instructional Delivery

Information technology, not only can increase access, but can enhance the efficiency and effectiveness of instruction itself. Instructional practice is moving into an era of multimedia learning where courses can be designed for known differences in student learning behaviors. Although limited research is available on the impact of integration of technology in learning, the research supports the importance of assessing the compatibility of learning preferences with the delivery methods on the entire spectrum of the technology continuum. Instructional delivery through technology provides a base for maintenance of quality in graduate and undergraduate programs, preparation for citizenship in an online world, and accountability to citizens

demanding that higher education instruction provide students with skills required in the new workplace.

Some campuses have chosen to outsource, where others have chosen to handle the development and delivery internally. CU-Denver, setting the pace as a model of good practice in the use of information technology for teaching and learning, has had successful experiences with a variety of delivery methods of distance education programs. As distance education programs proliferate across the country, so do the delivery methods for implementing such programs. The following are three models currently used in the CU system:

CU Online: The Outsourced Model

CU Online, which began in the Spring of 1996, was a pilot program in the College of Liberal Arts and Sciences. At the time only four faculty participated in the program, yet over 50 students tried to enroll in the 25 slots allowed for each section. The responses from students were overwhelming. Because of such great success, expansion goals were set to offering 50 courses within a year. Due to such rapid growth, the administration chose to outsource the program to a vendor specializing in distance education.

> ***Target audience.*** This program attracted several populations: the urban, working adult students in the Denver Metro area and students in the international programs. The goal was *"anytime, anyplace"* education where students from anywhere in the world could log-on to CU Online classes at any time.
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> ***Characteristics of delivery system.*** CU Online utilizes threaded discussions, real-time chat, audio, and video. Students log-on to their courses at their convenience, but must complete their course work on a weekly basis. CU Online students can seek advising and career counseling, order books, search for resources, register, and arrange for payment online. In addition, online tutorial services are supported by the University.
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> ***Program outcome.*** In the Fall of 1997, the program exceeded its projected growth goals, from having as few as four students per course, to 53 courses with 775 total class enrollments. By the Spring of 1998, approximately 70 courses were offered with over 1,000 enrollments.

In addition to the growth in the College of Liberal Arts and Sciences on the Denver campus, other colleges and campuses of the CU system are now using the CU Online model to implement distance education courses. While currently 90% of the students online are within Colorado, future plans include increasing the number of students and increasing the number of non-resident learners in the online courses. Because the courses are totally Internet based, a student never needs to come to campus.

Advantages of this model. Programmers, technicians, and instructional designers are provided by the vendor; the University's role is to concentrate on the academic and administrative aspects of the program. The vendor owns the delivery system, but the University owns all the course material, student data, and information contained on the web site.

The Executive Programs: In-House Model

Two Executive Programs, one MBA program and one Healthcare Administration program, offer courses to business professionals. The Executive Programs began their distance education courses in the 1980's using listservs and telephone lines and now include computer conferencing and web sites.

Target audience. Both the MBA and Healthcare Administration programs attract professionals who are already working in their chosen career and cannot leave their jobs to pursue a graduate degree.

Characteristics of delivery system. Although the courses are offered at a distance, the students come to campus several times during the program where they meet their professors and receive textbooks, reading packets, and course outlines. Introductory lectures and group discussions also take place during this time. While off-campus, students maintain contact with professors and classmates via the FirstClass conferencing system -- the conferencing system lets students send electronic mail, share files, and participate in electronic group discussions. Each course has its own area on the conferencing system and students can read and respond to questions from their professors and classmates.

Program outcome. Since its inception in the 80's, the enrollment in our Executive Programs has been steadily growing.

Advantages of this model. The FirstClass system is easy to use and maintain, the amount of support is minimal and can be handled in-house. To keep a FirstClass server running takes the equivalent of one full-time staff member to serve as system administrator. The following administrative duties can be distributed to more than one individual as necessary:

- Day-to-day server maintenance (backups, software upgrades, hardware maintenance, networking)
- Faculty support and training
- Development of new courses
- Student support and training (classroom demonstrations, e-mail and telephone support)
- Development of documentation, both on-line and hard copy
- Troubleshooting user problems, server problems, and network problems.

CU Virtual and M. A. in Public Administration Program: 'Hybrid' Model

The 'hybrid' model includes technology that could be used for a complete distance delivery or as complementary support for on-campus courses. For instance, CU Virtual is an online service, using FirstClass software, that enables distribution of course assignments and materials online, asynchronous class discussion sections, and real-time chats for class discussions and office hours.

Target audience. The Rocky Mountain MPA provides a unique opportunity for students with complicated and busy schedules, or those who live far from the University, to obtain a Master of Public Administration degree.

Characteristics of delivery system. The Graduate School of Public Affairs is using both CU Virtual and a web interface to deliver some courses. It includes: an initial two-day session where students receive training in Internet-based learning; six web-based MPA core courses offered over the Internet; and electives provided at a variety of locations around Colorado and taught in an intensive format for students with time and travel constraints. Most of the course material is published on the web site for the course (access is controlled by user Id and passwords), but students and faculty use CU Virtual for e-mail, submitting homework, and real-time chat.

Although some faculty have used CU Virtual as a full-fledged distance education environment with no face-to-face class meetings, the system's focus is on online support combined with the traditional classroom.

Program outcome. Since its inception in Fall 1996, CU Virtual has grown rapidly becoming a reliable tool for approximately 3000 students; 64 courses are currently offered. Over 130 faculty have used the system, and these numbers increase weekly - primarily through word-of-mouth endorsements. CU Virtual continues to be free for students and faculty and is open to all CU-Denver students, faculty and staff.

Advantages of this model. The technological (and therefore financial and time investment) requirements of CU Virtual are minimal: students can use any version of

Windows, any Macintosh, and a 2400 baud or faster modem to log-on remotely. This was critical to our conception of CU Virtual as a low-cost, easy-to-use, highly accessible system. Posting materials requires no special skills or privileges (e.g. HTML programming), so updates to posted materials are quick and simple, and easily accomplished.

These different models all function successfully within the CU Denver campus, and represent how differently distance education programs can be delivered. Each succeeds because of a different combination directed at the target audience and meeting program goals. Technology cannot simply be grafted on as cosmetic or political additions to current structures, methods and policies. CU-Denver exemplifies various current practices to approach a more seamless integration of instructional technology.

Issues for Future Consideration

New technologies open up new possibilities and the integration of distance learning into the curriculum provides unique and exciting opportunities to deliver programs to geographically diverse students. However, the success and quality of the distance delivery still rests primarily on the shoulders of the faculty. Yet, only some "early adopters" have embraced the new technology and are using it in their teaching. Many more view it as a threat to their jobs and traditions. To effectively integrate the new technology into the mainstream academic culture, it is imperative that faculty receive adequate support and leadership from their institutions (Olcott, 1995).

Issues of *intellectual property*, *compensation*, *quality of instruction* and *professional growth* are areas desperately calling for the development or revision of current policies which relate to the nature of faculty work. Universities are indeed in the experimental stages of distance education and have typically approached this task in somewhat of an entrepreneurial mode, developing faculty contracts on a case by case basis. However, universities which

incorporate distance learning into their mission and culture must also lead the way in the development of consistent institutional policies. Now we must create opportunities for reflection concerning the institution's central goals and mission, and how to best meet those goals.

References

CU-Denver Information Technology Initiative Committee (1995). *Information Technology Initiative: Program Plan*. Colorado.

Dolence, M. G. & Norris, D. M. (1995). *Transforming higher education: A vision for learning in the 21st century*. Ann Arbor, Michigan: Society for College and University Planning.

Olcott, D. J. & Wright, S. J. (1995). An institutional support framework for increasing faculty participation in postsecondary distance education. *American Journal of Distance Education, 9(3)*, 5-17.

Panelists: Schneider, Schlenker, LaDell, & Younger. (1998). *Outsourcing, in-house, and everything in between*. Presented at NAUWeb 98.

Russell, T. L. (1997). Adult assessment forum: "No significant difference". *Journal of Quality Management in Adult-Centered Education, 7(4)*, 6-9.